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EXAMINER
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NAFF, DAVID M

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Application Number: 10/618,477  
Filing Date: July 11, 2003  
Appellant(s): HENRIKSEN ET AL.

**MAILED**  
**MAY 25 2007**  
**GROUP 1600**

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Elias Lambiris  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed Jan. 19, 2007  
appealing from the Office action mailed April 4, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**WITHDRAWN REJECTIONS**

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The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The rejection under 35 USC 112, first paragraph. The rejection under 35 USC 103 over Linton et al in view of De Lima et al or Harz et al or Lassen et al and Akhtar. The rejection of claims 39 and 53 under 35 USC 103. Harz et al and Lassen et al are withdrawn in the rejection under 35 USC 103 over De Lima et al or Harz et al or Lassen et al in view of Linton et al and Akhtar. The obvious double patenting rejection.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,136,772	De Lima et al	10-2000 (filed 05-1997)
4,859,485	Linton et al	08-1989
5,750,005	Akhtar	05-1998

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 34-38 and 40-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Lima et al in view of Linton et al and Akhtar.

The claims are drawn to a solid phytase composition comprising an enzyme having phytase activity of above 20 FYT/g of the composition, and corn steep liquor in an amount sufficient to stabilize the enzyme.

De Lima et al disclose preparing enzyme-containing granules by contacting a starch core with an aqueous enzyme solution for a time sufficient to allow absorption of the enzyme solution by the starch core, and drying the enzyme-containing starch core. For example, see col 37, lines 33-44, and col 2, lines 9-34. The amount of enzyme incorporated in the granule will depend on the intended use of the granule, and for many uses the enzyme content will be as high as possible or practicable (col 15, lines 55-58). The content of enzyme (calculated as pure enzyme protein) in the granule will typically be in the range of from about 0.5% to 20% by weight of the enzyme-containing granule (col 15, lines 59-62). The granules may contain various

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additives (adjuncts) (col 16, lines 4-30). The additives or adjuncts can be incorporated into the granule using fluidized bed spray-coating, pan-coating or other techniques for building up a granule by adding consecutive layers on a starting core material (col 16, lines 23-25). The enzyme-containing granules may be used in detergents, baking products and animal feed compositions (col 16, lines 41-48), and the granules are well suited for use in animal feed compositions (col 10, lines 39-40, and col 16, lines 36 and 53-56). Phytase is an enzyme used in animal feed compositions (col 16, lines 47-48). In Example 26 (col 26, lines 15-28), phytase-containing granules are prepared by spraying a starch core of 300-1000  $\mu\text{m}$  in size with a phytase solution prepared by diluting a phytase concentrate (from Novo Nordisk A/S) to a concentration of 10700 FYT/g, and drying the resultant phytase-containing core. The resultant granules are mixed with a commercial piglet feed composition, and the mixture is formulated into pellets (col 36, lines 61-67).

Linton et al disclose an animal feed supplement containing a mixture of wet corn bran and corn steep liquor (col 3, lines 55-60). The corn steep liquor contains soluble nutrients in corn grain including dissolved vitamins, minerals and other soluble nutrients (col 1, lines 40-43). Corn steep liquor is an economical source of protein and an excellent source of energy

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and phosphorus (col 1, lines 45-48), and the dissolved nutrients are readily available to the animal (col 1, lines 49-52). The corn steep liquor preserves the wet corn bran (col 4, lines 5-9).

Akhtar discloses that corn steep liquor is used as a liquid supplement for ruminants, a nutrient source for poultry and a protein source for cattle range blocks (col 6, lines 30-35).

When adding phytase-containing granules to an animal feed composition as disclosed by De Lima et al and providing the granules with an additive or adjunct as further disclosed by De Lima et al, it would have been obvious to use corn steep liquor as the additive or adjunct to obtain the function of corn steep liquor as an animal feed supplement as disclosed by Linton et al and Akhtar to provide a source of readily available soluble nutrients, an economical source of protein and excellent source of energy and phosphorus, and to function as a preservative as disclosed by Linton et al. De Lima et al disclose numerous additives or adjuncts (col 16, lines 4-25) that can be incorporated with the enzyme in the granule, and corn steep liquor would have been an obvious additive or adjunct to obtain its function as suggested by Linton et al and Akhtar. Linton et al and Akhtar disclose corn steep liquor as a source of protein, and De Lima et al disclose proteins as an additive or adjunct

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(col 16, lines 13). Corn steep liquor will inherently stabilize phytase of the phytase-containing granules of De Lima et al when the corn steep liquor is used as the additive or adjunct. The phytase activity of 10700FYT/g disclosed by De Lima et al (col 36, line 25) will provide a phytase activity above 20 FYT/g as required in claim 34, and within the ranges of dependent claims. Moreover, De Lima et al disclose (col 15, lines 55-58) that the amount of enzyme to be incorporated in a granule will depend on intended use of the granule, and for many applications the amount will be as high as possible or practicable. If the 10700 FYT/g does not provide sufficient phytase activity for a particular use, it would have been obvious to provide a higher FYT/g by not diluting as much the concentrate diluted by De Lima et al in Example 26 (col 36, lines 22-24). The phytase-containing granules of De Lima et al are dried (step 2 in Example 26), and when using corn steep liquor as an additive or adjunct, the resultant composition will be a solid composition as in claim 34. A dry solid composition will obviously be stable during storage and have less bulk for transportation. De Lima et al disclose wheat starch (col 5, line 57) as in claim 38, a filler material (col 8, lines 3 and 32-40) as in claim 41, and a carrier (col 7, line 50) as in claim 40. Linton et al disclose that corn steep liquor contains vitamins and minerals



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(col 1, line 42), and using corn steep liquid as the additive or adjunct of De Lima et al will provide minerals and/or vitamins as in claim 42. Conventional corn steep liquor disclosed by Linton et al and Akhtar will inherently provide the HPLC chromatogram of claim 36. As to the percent of corn steep liquor required by claim 35, it would have been within the skill of the art and obvious to determine the amount of corn steep liquor to be incorporated in the granule for use of the granule in a particular animal feed composition as suggested by De Lima et al disclosing that the amount of enzyme in the granule depends on intended use of the granule (col 15, lines 55-58).

**(10) Response to Argument**

Appellants urge that the references do not disclose an animal feed composition containing both phytase and corn steep liquor, and none of the cited references suggests that corn steep liquor will stabilize phytase in an animal feed composition. Appellants point to Examples 4-7 in the specification as showing that the presence of corn steep liquor significantly improves the stability of phytase.

The above argument is unpersuasive since Linton et al and Akhtar disclose functioning of corn steep liquor as an animal feed supplement that would have been motivation to use corn steep liquor as the additive or adjunct of De Lima et al. Corn

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steep liquor stabilizing phytase would have been inherent when using corn steep liquor as the additive or adjunct for its function disclosed by Linton et al and Akhtar. There is seen nothing to prevent corn steep liquor functioning to stabilize phytase when both are in the granule of De Lima et al. Even if the stabilizing is not as much as shown by Examples 4-7 in the specification, the claims do not require the increase in phytase stability shown by the examples. The claims encompass less increase in stability.

Appellants refer to a decision (60 USPQ 2d 1423) as supporting that discovery of a new property of a new composition can make an obvious composition unobvious and patentable. However, a new property making an obvious composition unobvious is not found in this decision. The discovery that corn steep liquor stabilizes phytase when added to an animal feed composition does not make unobvious using corn steep liquor as the additive or adjunct of De Lima et al to obtain the known functioning of corn steep liquor as a supplement in an animal feed composition.

Appellants refer to claim 1 of U.S Patent No. 6,610,519 that issued from parent application 09/410,503 over the references presently applied. However, the present claims are

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different from claim 1 of the patent, and the present claims do not require limitations contained by claim 1.

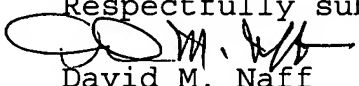
In regard to dependent claims 37 and 38, De Lima et al use starch as the core of the granule, and disclose wheat starch (col 5, line 57). It would have been obvious to use wheat starch as the core when the using corn steep liquor as the additive or adjunct of De Lima et al to obtain the function of corn steep liquor in an animal feed composition taught by Linton et al and Akhtar. The present claims do not require starch or wheat starch to provide stabilizing of phytase in addition to that required by claim 34.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


  
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